

REMARKS

I. Formalities

Applicants thank the Examiner for indicating that the Formal Drawings filed on November 14, 2003 have been accepted.

II. Status of the Application

By the present amendment, claims 1, 32, 103 and 119 have been amended. Claims 1-15, 17-39, 41-43, 45-51, 53-58 and 103-129 are all the claims pending in the Application, with claims 1, 32, 103 and 119 being in independent form. Claims 1-15, 17-39, 41-43, 45-51, 53-58 and 103-129 have been rejected.

The present amendment addresses each point of objection and rejection raised by the Examiner. Favorable reconsideration is respectfully requested.

III. Claim Rejections - 35 USC § 102

The Examiner has rejected claims 1-3, 5-7, 9-13, 17, 23-24, 26-29, 32-34, 37-39, 41-42, 51, 55-57, 103-105, 107, 109-112, 114, 116-121, 124-126 and 128-129 under 35 U.S.C. § 102(b) as being anticipated Japanese Patent Publication No. 10-232196 to Ito *et al.* (hereinafter "Ito"). Applicants traverse this rejection for *at least* the reasons stated below.

According to the MPEP, "a claim is anticipated only if each and every element as set forth in the claim is found, either expressly or inherently described, in a single prior art reference." MPEP § 2131. Applicants respectfully submit that claims 1-3, 5-7, 9-13, 17, 23-24, 26-29, 32-34, 37-39, 41-42, 51, 55-57, 103-105, 107, 109-112, 114, 116-121, 124-126 and 128-129 positively recite limitations which are not disclosed (or suggested) by Ito.

A. Independent Claim 1

Independent claim 1 requires (among other things):

an area detector which determines as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness.

The grounds of rejection allege that the data processor 15 disclosed in Ito, corresponds to “an area detector,” as recited in claim 1. Applicants respectfully disagree with the grounds of rejection for *at least* the reasons set forth below.

Ito does not disclose an area detector, which determines as a group only pixels that are simultaneously irradiated by a laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness, as required by claim 1. To the contrary, Ito discloses that the data processor 15, determines as a group, pixels which are irradiated by scattered laser beam light 21 during a fixed time span (i.e., during a gate opening time of either 100 ns or 200 ns) to thereby display a locus 23 of the scattered light.

More particularly, Ito discloses that when the laser beam light 13 is scattered by moving particles 20, the scattered laser beam light 21 is then irradiated onto pixels located on photodetector 14. *See* paragraph 0025. Further, Ito discloses that the photodetector 14 measures the scattered light 21, every 5 seconds, during a certain fixed time span (e.g., a gate opening time of 100 ns). *See* paragraph 0024. As disclosed in Ito, if the data processor 15 judges that the

intensity of the scattered light received by photodetector 14 exceeds a predetermined value, then the exposure time of photodetector 14 is prolonged to a longer fixed time span (e.g., a gate opening time of 200 ns). *See* paragraph 0025. Thus, Ito discloses that the motion of the particles 20 during this fixed time span is displayed as a locus 23 of scattered light on a display unit of the data processor 15. *See* paragraphs 0024-0025; Figure 1. That is, each locus 23 displays the pixels on photodetector 14 that are irradiated during a fixed time span.

Therefore, Ito discloses determining as a group, pixels that are irradiated during a certain fixed time span and displaying this group as, for example, the locus 23. In contrast, the apparatus recited in claim 1, determines as a group only pixels that are simultaneously irradiated by laser beam light scattered by a particle. Consequently, Ito groups pixels together in a completely different manner than the area detector recited in claim 1. In fact, since Ito discloses grouping pixels together which are irradiated during a fixed time span, Ito cannot possibly disclose (or suggest) grouping together only pixels that are simultaneously irradiated.

Accordingly, Applicants respectfully submit that independent claim 1 is not anticipated by (i.e. is not readable on) Ito for *at least* these reasons. Further, Applicants respectfully submit that the dependent claims 2-3, 5-7, 9-13, 17, 23-24 and 26-29 are allowable *at least* by virtue of their dependency on claim 1. Thus, Applicants respectfully request that the Examiner withdraw these rejections.

B. Independent Claim 32

Independent claim 32 requires (among other things):

determining as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness.

In view of the similarity between these requirements and the requirements discussed above with respect to independent claim 1, Applicants respectfully submit that the foregoing arguments as to the patentability of independent claim 1 apply at least by analogy to claim 32. As such, it is respectfully submitted that claim 32 is patentably distinguishable over Ito for *at least* these reasons. Further, Applicants submit that the dependent claims 33-34, 37-39, 41-42, 51 and 55-57 are allowable *at least* by virtue of their dependency on claim 32. Thus, the allowance of these claims is respectfully solicited of the Examiner.

C. Independent Claim 103

Independent claim 103 requires (among other things):

an area detector which determines as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness.

In view of the similarity between these requirements and the requirements discussed above with respect to independent claim 1, Applicants respectfully submit that the foregoing arguments as to the patentability of independent claim 1 apply at least by analogy to claim 103.

As such, it is respectfully submitted that claim 103 is patentably distinguishable over Ito for *at least* these reasons. Further, Applicants submit that the dependent claims 103-105, 107, 109-112, 114 and 116-118 are allowable *at least* by virtue of their dependency on claim 103. Thus, the allowance of these claims is respectfully solicited of the Examiner.

D. Independent Claim 119

Independent claim 119 requires (among other things):

determining as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness.

In view of the similarity between these requirements and the requirements discussed above with respect to independent claim 1, Applicants respectfully submit that the foregoing arguments as to the patentability of independent claim 1 apply at least by analogy to claim 119. As such, it is respectfully submitted that claim 119 is patentably distinguishable over Ito for *at least* these reasons. Further, Applicants submit that the dependent claims 120-121, 124-126 and 128-129 are allowable *at least* by virtue of their dependency on claim 119. Thus, the allowance of these claims is respectfully solicited of the Examiner.

IV. Claim Rejections - 35 USC § 103

The Examiner has rejected claims 30 and 50 under 35 U.S.C. § 103(a) as being unpatentable over Ito. The Examiner has also rejected claims 15, 18-21, 43, 47-50, 113, 115 and 127 under 35 U.S.C. § 103(a) as being unpatentable over Ito, and further in view of U.S. Patent No. 5,929,980 to Yamaguchi *et al.* (hereinafter "Yamaguchi"). Further, the Examiner has

rejected claims 4, 25, 35, 53, 106 and 122 under 35 U.S.C. § 103(a) as being unpatentable over Ito, and further in view of Japanese Patent Publication No. JP 10-010036 to Uesugi *et al.* (hereinafter “Uesugi”). The Examiner has rejected claim 45 under 35 U.S.C. § 103(a) as being unpatentable over Ito and Yamaguchi, and further in view of Uesugi. Moreover, the Examiner has rejected claims 8, 14, 31 and 108 under 35 U.S.C. § 103(a) as being unpatentable over Ito, and further in view of U.S. Patent No. 6,368,567 to Comita *et al.* (hereinafter “Comita”). The Examiner has rejected claims 22 and 46 under 35 U.S.C. § 103(a) as being unpatentable over Ito and Yamaguchi, and further in view of Comita. Finally, the Examiner has rejected claims 36, 54 and 123 under 35 U.S.C. § 103(a) as being unpatentable over Ito and Uesugi, and further in view of Comita. These rejections are respectfully traversed for *at least* the reasons stated below.

A. Independent Claim 1

Applicants respectfully submit that neither Ito, Yamaguchi, Uesugi, Comita, nor any combination thereof, teaches or suggests all the limitations of independent claim 1. As explained above, Ito fails to disclose or suggest an area detector, which determines as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness, as required by claim 1. Further, neither Yamaguchi, Uesugi, nor Comita teaches or suggests this feature. Consequently, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of independent claim 1. Accordingly, claim 1 would not have been obvious from Ito, Yamaguchi,

Uesugi, Comita, or any combination thereof, for *at least* these reasons. As a result, Applicants request that the Examiner withdraw this rejection.

B. Dependent Claims 4, 8, 14-15, 18-22, 25 and 30-31

Claims 4, 8, 14-15, 18-22, 25 and 30-31 incorporate all the novel and non-obvious features of their base claim 1. As explained above, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of base claim 1 and, therefore, the dependent claims 4, 8, 14-15, 18-22, 25, and 30-31 would not have been obvious from the cited references for *at least* these reasons.

C. Independent Claim 32

Applicants respectfully submit that neither Ito, Yamaguchi, Uesugi, Comita, nor any combination thereof, teaches or suggests all the limitations of independent claim 32. As explained above, Ito fails to disclose or suggest determining as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness, as required by claim 32. Further, neither Yamaguchi, Uesugi, nor Comita teaches or suggests this feature. Consequently, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of independent claim 32. Accordingly, claim 32 would not have been obvious from Ito, Yamaguchi, Uesugi, Comita, or any combination thereof, for *at least* these reasons. As a result, Applicants request that the Examiner withdraw this rejection.

D. Dependent Claims 35-36, 43, 45-50, 53-54 and 58

Claims 35-36, 43, 45-50, 53-54 and 58 incorporate all the novel and non-obvious features of their base claim 32. As explained above, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of base claim 32 and, therefore, the dependent claims 35-36, 43, 45-50, 53-54 and 58 would not have been obvious from the cited references for *at least* these reasons. Thus, Applicants request that the Examiner withdraw these rejections.

E. Independent Claim 103

Applicants respectfully submit that neither Ito, Yamaguchi, Uesugi, Comita, nor any combination thereof, teaches or suggests all the limitations of independent claim 103. As explained above, Ito fails to disclose or suggest an area detector which determines as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness, as required by claim 103. Further, neither Yamaguchi, Uesugi, nor Comita teaches or suggests this feature. Consequently, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of independent claim 103. Accordingly, claim 103 would not have been obvious from Ito, Yamaguchi, Uesugi, Comita, or any combination thereof, for *at least* these reasons. Therefore, Applicants request that the Examiner withdraw this rejection.

F. Dependent Claims 106, 108, 113 and 115

Claims 106, 108, 113, and 115 incorporate all the novel and non-obvious features of their base claim 103. As explained above, Ito, Yamaguchi, Uesugi, Comita, and any combination

thereof, are incapable of teaching or suggesting the novel recitations of base claim 103 and, therefore, the dependent claims 106, 108, 113, and 115 would not have been obvious from the cited references for *at least* these reasons. Consequently, Applicants request that the Examiner withdraw these rejections.

G. Independent Claim 119

Applicants respectfully submit that neither Ito, Yamaguchi, Uesugi, Comita, nor any combination thereof, teaches or suggests all the limitations of independent claim 119. As explained above, Ito fails to disclose or suggest determining as a group only pixels that are simultaneously irradiated by said laser beam scattered by one of said particles, that are located adjacent to each other, and that have a brightness equal to or greater than a predetermined threshold brightness, as required by claim 119. Further, neither Yamaguchi, Uesugi, nor Comita teaches or suggests this feature. Consequently, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of independent claim 119. Accordingly, claim 119 would not have been obvious from Ito, Yamaguchi, Uesugi, Comita, or any combination thereof, for *at least* these reasons. Hence, Applicants request that the Examiner withdraw this rejection.

H. Dependent Claims 122-123 and 127

Claims 122-123 and 127 incorporate all the novel and non-obvious features of their base claim 119. As explained above, Ito, Yamaguchi, Uesugi, Comita, and any combination thereof, are incapable of teaching or suggesting the novel recitations of base claim 119 and, therefore, the

dependent claims 122-123 and 127 would not have been obvious from the cited references for *at least* these reasons. Thus, Applicants request that the Examiner withdraw these rejections.

V. Conclusion

In view of the above, reconsideration and allowance of this application are now believed to be in order, and such actions are hereby solicited. If any points remain in issue which the Examiner feels may be best resolved through a personal or telephone interview, the Examiner is kindly requested to contact the undersigned at the telephone number listed below.

The USPTO is directed and authorized to charge all required fees, except for the Issue Fee and the Publication Fee, to Deposit Account No. 19-4880. Please also credit any overpayments to said Deposit Account.

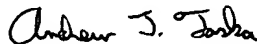
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